

**Fig. 1**

1 mawearrep grpaavretv mllclgvpt grpynvdtes allyqgphnt lfgysvvlhs  
61 hganrwllvg aptanwlana svnpgaiyr crigknpgqt ceqlqlgspn gpcgktele  
121 erdnqwlgvt lsrqpgengs ivtcghrwkn ifyiknenkl ptggcygvpp dlrtelskri  
181 apcyqdyvkk fgenfascqa gissfytndl ivmgapgssy wtgslfvyni ttnkykafld  
241 kqnqvkfgsy lgysvgaghf rsqhttevvg gapqheqigk ayifsideke lnihemkfk  
301 klgsyfgasv cavdlnadgf sdllvgapmq streegrvf vyinsgsgav mnametnlvg  
361 sdkyaarfge sivnlgdidn dgfedvaiga pqeddlqgai yiyngradgi sstfsqrieg  
421 lqiskslsmf gqsisqida dnngyvdvav gafrsdsavl lrtrpvvivd aslshpesvn  
481 rtkfdcveng wpsvoidltl cfisykgkevp gyivlfynms ldvnrikaesp prfyfssngt  
541 sdvitgsiqv ssreancrth qafmrkdvrd iltpiqieaa yhlgphvisk rsteefpplq  
601 pilqqkkekdl imkktnfar scahiencsad lqvsakigfl kphenktyla vgsmktlmln  
661 vslfnagdda yettilhvklp vglyfikile leekqincev tdnsgvvqld csigyiyvdh  
721 lsridisfl dvsslsraee dlsitvhato eneeemdnlk hsrvtvaapl kyevkltvhg  
781 fvnpptsfyg sndenepetc mvekmnlth vintgnmap nvsveimvpn sfspqtdklf  
841 nildvqtitg echfenyqrv caleqqksam qtlkgivrfl sktdkrllyc ikadphcinf  
901 lcnfgkmesg keasvhqle grpsilemde tsalkfeira tgfpepnprv ielnkdenva  
961 hvleglhq rpkryftivi isslllgli vllisyvmw kagffkrqyk silqeenrrd  
1021 swsyinsksn dd

**Fig. 2**

1 mnlqpifwig liissvccvfa qtdenrcika nakscegeciq agpncgwctn stflqegmpt  
61 sarcddleal kkkgcppddi enprgskdik knknvtnrsk gtaeklkped ihqiqpqqlv  
121 lrtrsgepqt flkfakraed ypidyyilm 1sysmkddle nvkslgtdlm nemrritsdf  
181 rigfgsfvek tvmpyisttp aklrnptse qcncittpfsyk nvlslnkge vfnelvgkqr  
241 isgnldspieg gfdaimqvav cgsligwrnv trllvfstda gfhfagdgkl ggivlpndgq  
301 chlennmytm shyydypsia hlvqklsenn iqtifavtee fqpvylkelkn lipksavgtl  
361 sanssnviql iidaynslss evilengkls egvtisyksy cknvgvngtge ngrkcsnisi  
421 gdevqfeisi tsnkcpkkds dsfkirplgf teevevilqy icececqseg ipespckcheg  
481 ngtfecgacr cnegrvgvrc ecstdevnse dmdaycrken sseiicsnngc cvcgqcvcrk  
541 rdntneiysg kfcecdnfnc drsnnglicgg ngvckorvce cnpyntgsac dcslldstce  
601 asngqicnrg gicecgvckc tdpkfqqgqtc emcqtculgvc aehkecvqcr afnkgekkdt  
661 ctqecsyfni tkvesrdklp qpvqdpvsh ckekdvddcw fyflysvngn nevmvhvven  
721 pecptgpdii pivagvvagi vliglallli wkllmiihdr refakfekek mnakwdtgen  
781 piyksavtv vnpkyegk

**Fig. 3A**

1 mpgkmvvilg asnilwimfa asqafkiett pesrylaqig dsvs1tcstt gcespffswr  
61 tqidsplngk vtnegttstl tmnpvsfgne hsylctatee srklekgiqv eiysfpkdpe  
121 ihlsgpleag kpitvkcsva dvypfdrllei dlkgdhlmk sqefledadr ksletkslev  
181 tftpviedig kvlvcraklh idemdsptv rqavkelqvy ispkntvisv npstklqegg  
241 svmtcsseg lpapeifwsk kldngnlqhl sgnaitlia mrmedsgiyv cegvnligkn  
301 rkevelivqe kpftveispg priaaqigds vmltcsvmge espfswrtq idsp1sgkvr  
361 segtnsttl spvsfenehs ylctvtcghk klekgiqvel ysfprdpie msgglvngss  
421 vtvscckvpsv ypldrleiel lkgetileni efledtdmks lenkslemtf iptiedtgka  
481 lvcqaklhid dmeffepkqrq stqtlvvnva prdttvjvsp ssileegssv nmtclsqgfp  
541 apkilwsrql pngelqplse natllistk medsgvylce ginqagrsrk eveliivqvt  
601 kdikltafps esvkegdtvi isctcgnvpe twiilkkae tgdvlksid gaytirkaql  
661 kdagvyeces knkvgsqlrs l1ldvqgren nkdyfspell vlyfasslii paigmiiyfa  
721 rkanmkgsys lveaqkskv

**Fig. 3B**

1 mpgkmvvilg asnilwimfa asqafkiett pesrylaqig dsvs1tcstt gcespffswr  
61 tqidsplngk vtnegttstl tmnpvsfgne hsylctatee srklekgiqv eiysfpkdpe  
121 ihlsgpleag kpitvkcsva dvypfdrllei dlkgdhlmk sqefledadr ksletkslev  
181 tftpviedig kvlvcraklh idemdsptv rqavkelqvy ispkntvisv npstklqegg  
241 svmtcsseg lpapeifwsk kldngnlqhl sgnaitlia mrmedsgiyv cegvnligkn  
301 rkevelivqa fprdpelims gglvngssvt vsckvpsvyp ldrleielk getilenief  
361 ledtdmksle nkslemtfip tiedtgkaly cqaklhiddm efepkqrqst qtlyvvnapr  
421 dttv1vspss ileegssvnm tclsqgfpap kilwsrqlpn gelqplsen a tlistkme  
481 dsgvylcegi nqagrsrkev eliqvtpkd ikltafpses vkegdtviis ctgnvpetw  
541 iilkkaetg dtvlksidga ytirkaqlkd agvyeceskn kvgsqrls1t l1dvqgrennk  
601 dyfspellvl yfasslii paigmiiyfark anmkgsyslv eaqkskv

## Fig. 4

1 mlrgpgpgll llavqolgt a v p s t g a s k s k r q a q q m v q p q s p v a v s q s k p g c y d n g k h y q  
61 inqqwertyl g n a l v c t c y g g s r g f n i c e s k p e a e e t c f d k y t g n t y r v g d t y e r p k d s m i  
121 w d c t c i g a g r g r i s c t i a n r c h e g g q s y k i g d t w r r p h e t g g y m l e c v c l g n g k g e w t c k  
181 p i a e k c f d h a a g t s y v v g e t w e k p y q g w m m v d c t c l g e g s g r i t c t s r n r c n d q d t r t s y  
241 r i g d t w s k k d n r g n l l q c i c t g n g r g e w k c e r h t s v q t t s s g s g p f t d v r a a v y q p q p h p  
301 q p p p y g h e v t d s g v v y s v g m q w l k t q g n k q m l c t c l g n g v s c q e t a v t q t y g g n s n g e p c  
361 v l p f t y n g r t f y s c t t e g r q d g h l w c s t t s n y e q d q k y s f c t d h t v l v q t q g g n s n g a l c  
421 h s p f l y n n h n y t d c t s e g r r d n m k w c g t t q n y d a d q k f g f c p m a a h e e i c t t n e g v m y r i  
481 g d q w d k q h d m g h m m r c t c v g n r g e w t c i a y s q l r d q c i v d d i t y n v n d t f h k r h e e g h m  
541 l n c t c f g q g r g r w k c d p v d q c q d s e t g t f y q i g d s w e k y v h g v r y q c y c y g r g i g e w h c q  
601 p l q t y p s s s g p v e v f i t e t p s q p n s h p i q w n a p q p s h i s k y i l r w r p k n s v g r w k e a t i p  
661 g h l n s y t i k g l k p g v v y e g q l i s i q q y g h q e v t r f d f t t s t s p v t s n t v t g e t t p f s p  
721 l v a t s e s v t e i t a s s f v v s w v s a s d t v s g f r v e y e l s e e g d e p q y l d l p s t a t s v n i p d l  
781 l p g r k y i v n v y q i s e d g e q s l i l s t s q t t a p d a p p d p t v d q v d d t s i v v r w s r p q a p i t g  
841 y r i v y s p s v e g s s t e l n l p e t a n s v t l s d l q p g v q y n i t i y a v e e n q e s t p v v i q q e t t g  
901 t p r s d t v p s p r d l q f v e v t d v k v t i m w t p p e s a v t g y r v d v i p v n l p g e h g q r i p i s r n t  
961 f a e v t g l s p g v t y y f l k v f a v s h g r e s k p l t a q q t k l d a p t n l q f v n e t d s t v l v r w t p p  
1021 r a q i t g y r l t v g l r r g q p r q y n v g p s v k y p l r n l q p a s e y t v s l v a i k g n q e s p k a t g  
1081 v f t l q p g s s i p p y n t e v t e t t i v i t w t p a p r i g f k l g v r p s q g g e a p r e v t s d s g s i v v  
1141 s g l t p g v e v y v t i q v l r d g q q e r d a p i v n k v v t p l s p p t n l h l e a n p d t g v l t v s w e r s t t  
1201 p d i t g y r i t t p t n g q q g n s l e e v v h a d q s s c t f d n l s p g l e y n v s v y t v k d d k e s v p i s  
1261 d t i i p a v p p p t d l r f n i g p d t m r v t w a p p p s i d l t n f l v r y s p v k n e e d v a e l s i s p s d  
1321 n a v v l t n l p p g t e y v v s v s s v y e q h e s t p l r g r q k t g l d s p t g i d f s d i t a n s f t v h w i a  
1381 p r a t i t g y r i r h b p e h f s g r p r e d r v p h s r n s i l t n l p g t e y v v s i v a l n g r e s p l l  
1441 i g q q s t v s d v p r d l e v v a a t p t s l l i s w d a p a v t v r y y r i t y g e t g g n s p v q e f t v p g s k  
1501 s t a t i s g l k p g v d y t i t v y a v t g r g d s p a s s k p i s i n y r t e i d k p s q m q v t d v q d n s i s v  
1561 k w l p s s p v t g y r v t t p k n g p g p t k t k t a g p d q t e m t i e g l q p t v e y v v s v y a q n p s g e  
1621 s q p l v q t a v t n i d r p k g l a f t d v d v d s i k i a w e s p q g q v s r y r v t y s s p e d g i h e l f p a p  
1681 d g e e d t a e l q g l r p g s e y t v s v v a l h d d m e s q p l i g t q s t a i p a p t d l k f t q v t p t s l s a  
1741 q w t p p n v q l t g y r v r t p k e k t g p m k e i n l a p d s s s v v v s g l m v a t k y e v s v y a l k d t l t  
1801 s r p a q g v v t t l e n v s p p r r a r v t d a t e t t i t i s w r t k t t e t i t g f q v d a v p a n g q t p i q r t  
1861 i k p d v r s y t i t g l q p g t d y k i y l t l n d n a r s s p v v i d a s t a i d a p s n l r f l a t t p n s l l  
1921 v s w q p p r a i t g y i i k y e k p g s p p r e v v p r p r g v t e a t i t g l e p g t e y t i y v i a l k n n q  
1981 k s e p l i g r k k t d e l p q l v t l p h p n l h g p e i l d v p s t v q k t p f v t h p g y d t g n g i q l p g t s  
2041 g q q p s v g q q m i f e e h g f r t t p p t t a t p i r h r p r p y p p n v g e e i q i g h i p r e d v d y h l y p  
2101 h g p g l n p n a s t g q e a l s q t t i s w a p f q d t s e y i i s c h p v g t d e e p l q f r v p g t s t s a l t  
2161 g l r g a t y n i i v e a l k d q q r h k v r e e v v t v g n s v n e g i n q p t d d s c f d p y t v s h y a v g d e  
2221 w e r m s e s g f k l l c q o l g f g s g h f r c d s s r w c h d n g v n y k i g e k w d r q g e n g q m m s c t o l g  
2281 n g k g e f k c d p h e a t c y d d g k t y h v g e q w k e y l g a i c s c t c f g g q r g w r c d n c r r p g g e p  
2341 s p e g t t g q s y n q y s q r y h q r t n t n v n c p i e c f m p l d v q a d r e d s r e

Fig. 5

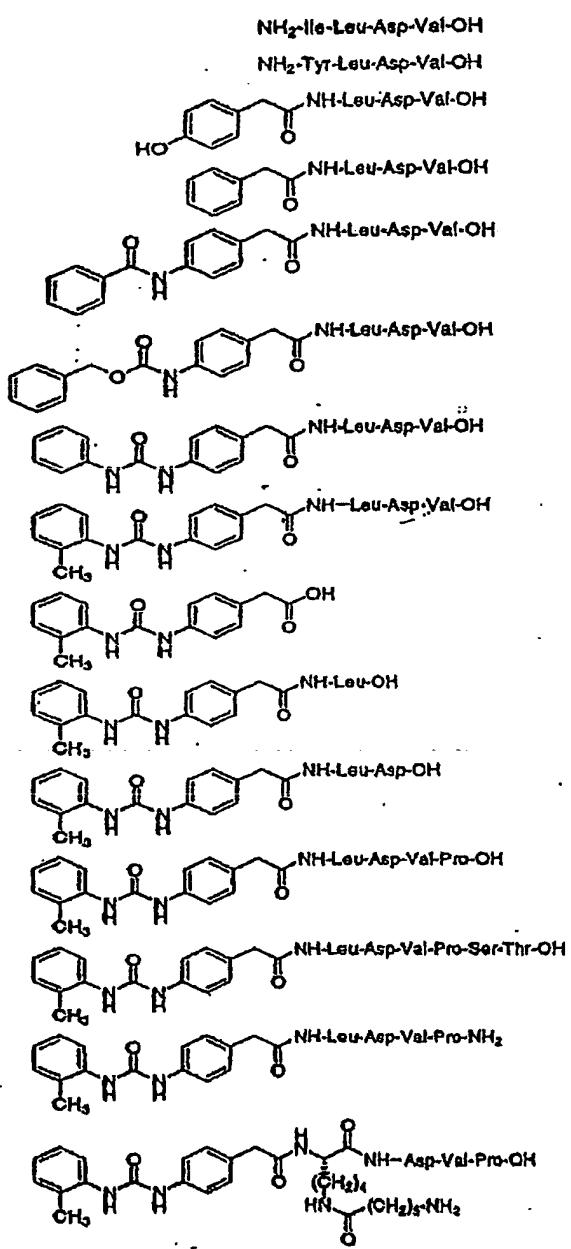


Fig. 6

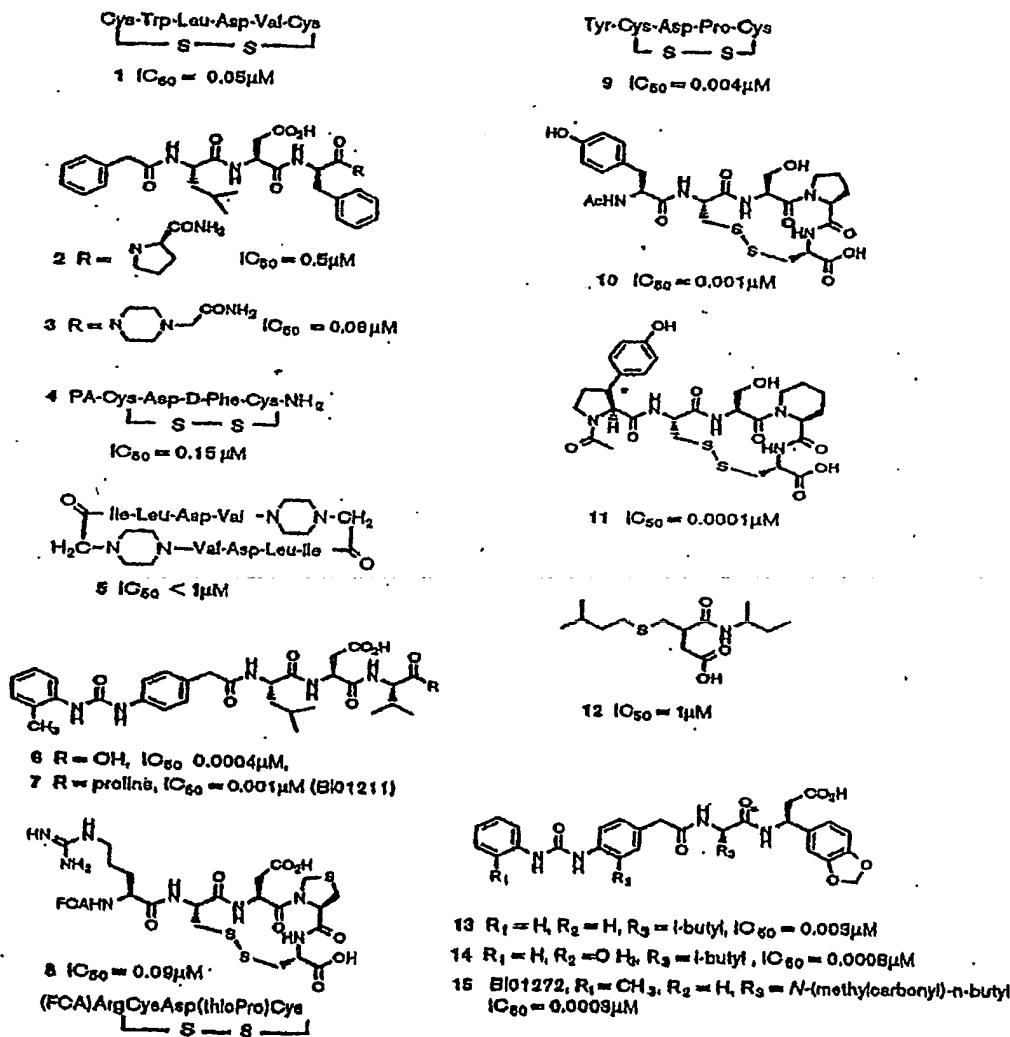


Fig. 7

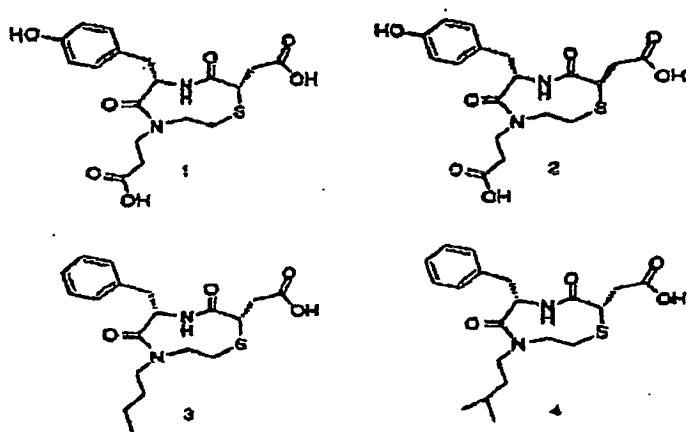


Fig. 8A

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1  gccatcccg  gctctgcggg  ctgggaggcc  cggggccagga  cgcgagtcot  gcgcagccga
61  ggttccccag  cggccctctgc  agccggcggt  aggcagagac  ggagccggc  cctgcgcctc
121  cgcacacgc  cggggadccc  acccagccgc  ccgtaccggg  agaagcagc  cgagcacccg
181  aagctcccg  ctggcgccag  aaaccgggag  tggggccggg  cgagtgcgcg  gcatccagg
241  cccggcccgaa  cgctccgccc  ggggtgggg  gacttccct  catcttccct  ctotcattcc
301  ttagccccgc  tggcgccgg  cagcgtgcgc  ctcatcttt  ggggogttct  tcccogettgg
361  ccaacgtcg  catcccggtc  aactttgggg  tagtggccgt  ttatgtttga  atgttccca
421  cccgagagcgc  atggatttggg  aagcgaggcg  cgaaccggc  ccccgaaagg  ccccgctccg
481  ggagacgggt  atgtctgttc  tttgtctggg  ggtcccgacc  gggcgccccct  acaacgtgga
541  oactgagac  ggcgttgc  accaggggcc  ccadaacacg  ctgttoggct  aotcggtcgt
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661  cgcggaaadgt  tcagtgtatca  atccggggcc  gatttacaga  tgcaggatcg  gaaagaatcc
721  cggccagaa  tgcgaaacagc  tccagatggg  tagcccta  ggagaacac  gtggaaaagac
781  ttgttggaa  gagagagaca  atcagtggtt  gggggtcaca  ctttccagac  agccaggaga
841  aaatggatcc  atcgtgactt  gtggcata  atggggaaat  atattttada  taaaagatga
901  aaataagctc  cccactgttg  gttgtatgg  atgtccccct  gatttacgaa  cagaactgag
961  taaaagaata  gtcgggtt  atcaagatta  tttggagaaa  attttgcatt  aatggattt
1021  atgtcaagct  ggaatata  gtttttacac  aatggattt  attgtgatgg  gggcccccagg
1081  atccatcttac  tggactggct  ctcttttgc  ctadaatata  actacaaata  aatacaaggc
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1261  gattggtaag  gcatatata  tcagcattga  tggaaaagaa  ctaaataatct  tacatgaaat
1321  gaaaggtaaa  aagcttggat  cgtactttgg  agcttctgtc  tttgtctgtgg  acctcaatgc
1381  agatggctt  tcagatctgc  tcggggggc  acccattgc  agcaccatca  gagaggaagg
1441  aagatgttt  gtgtacatca  acttgggtc  gggagcagta  atgaatgca  tggaaadaaa
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1561  cattgacaaat  gatggcttgc  aagatgttgc  tatcgagct  ccacaagaag  atgacttgc
1621  aggtgttatt  tatatttaca  atggccgtgc  agatgggtac  tttgtcaac  tctcacagag
1681  aattgaagga  ottcagatca  gcaaatcg  aagtatgtt  ggacagtcta  tatcaggaca
1741  aattgtatca  gataataatg  gctatgtaga  tttttttttt  ggtgtttt  ggtctgtt
1801  tgctgtctt  ctaaggacaa  gacctgtgt  aattgttgc  gtttcttta  gccacccctga
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1921  tctaacactt  tttttctcat  ataaggccaa  ggaagttcc  gtttacattt  ttttggggaa
1981  taacatgat  ttggatgtga  acagaaaggc  agatotcc  ccaagattt  atttcttcc
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2161  tgaagctgt  taccacctt  gtcotcatgt  catcgttt  cgaagtaoag  aggaattcc
2221  accacttcag  ccaatttcc  agcagaagaa  agaaaaagac  ataatgaaaa  aaacaataaa
2281  ctttgcagg  ttttgcgg  atgaaaaattt  ttctgtgt  ttacagg  tttttttt  ctgcacaaagat
2341  tgggtttttt  aagccccatg  aaaataaaac  atatcttgc  gttgggagta  tgaagacatt
2401  gatgttgaat  gtgttcttgc  ttaatgttgc  agatgtatca  tatgaaacga  ctotacatgt
2461  caaactaccc  gtgggttcc  attttattaa  gattttagag  ctggaaagaga  agcaataaaa
2521  ctgtgaagtc  acaagataact  otggcggtt  acaacttgc  tgcagtattt  gcttatata

```

## Fig. 8B

2581 tgttagatcat ctctcaagga tagatattag otttctcctg gatgtgagct cactcagcag  
2641 agcggaaagag gacctcagta tcacagtgc tgctacctgt gaaaatgaag aggaaatgga  
2701 caatctaaag cacagcagag tgactgtgc aataccctta aataatgagg ttaagotgac  
2761 tgttcatatggg ttgttaaacc caacttcatt tggatgtatggc tcaaataatgatg aaaaatgagcc  
2821 tgaaacgtgc atgggtggaga aaatgaactt aactttccat gtatcaaca ctggcaatag  
2881 tatggctccc aatgttagtg tgaaataat ggtaccaaataat tccttttagcc cccaaactga  
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3001 tcaaagagtg tggcatttag agcagcaaaa gagtgcaatg cagacottga aaggcatagt  
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3181 ccaactggaa ggccggccat ccattttaga aatggatggg acttcagcac tcaagttga  
3241 aataagagca acagggtttc cagagccaaa tccaaagagta attgaactaa acaaggatga  
3301 gaatgttgcg catgttctac tggaggact acatcatcaa agacccaaac gttatttcac  
3361 catagtgtt atttcaagta gcttgctact tggacttatt gtacttctat tgatotcata  
3421 tgttatgtgg aaggctgggt tctttaaaag acaataaaaaa tctatcctac aagaagaaaa  
3481 cagaagagac agttggagtt atatcaacag taaaagcaat gatgattaag gacttcttc  
3541 aaattgagag aatggaaaaac ag

**Fig. 9A**

## Fig. 9B

2521 ctgtgaagtc acagataact ctggcgtggt acaacttgac tgcagtattg gctatatata  
2581 ttagatcat ctctcaagga tagatattag ctttctctg gatgtgagct cactcagcag  
2641 agcggaaagag gacctcagta tacagtgc a tgc t a c t t a a a t g a a g a g g a a a t g g a  
2701 caatctaaag cacaggcagag tgactgtgc a a a c c t t a a a t a t g a g g a t t a a g c t g a c  
2761 t g t c a t g g g t t t g t a a a c c a a c t c a t t a t g g a t t a a a t g a g g c  
2821 t g a a a c g t g c a t g g g a g a a a t g a a c t t a c t t c c a t t g t a a c a c t g c a a t a g  
2881 t a t g g c t c c c a a t g t a g t g t g g a a a t a a t g t a c c a a c t g a  
2941 t a a g c t g t c a a c t t t g g a t g t c a g a c a t c a t g g a g a t g c c a c t t g a  
3001 t c a a a g a g t g t g c a t t a g a c a g c a a a a g a g t g c a a t g c a g a c t t g a a a g g c a t a g t  
3061 c c g g t t c t t g t c c a a g a c t g a t a a g a g g c t t g t a c c a c a t t g  
3121 t t t a a a t t t c t t g t a a t t t g g g a a a a t g g a a a a g a g c c a g t g t c a t a t  
3181 c c a a c t g g a a g g c c a t c a t t t g a a t g g a t g a g a c t c a g c a c t c a g t t g a  
3241 a a t a a g a g c a a c a g g t t t c a g a g c a a a t c c a a g a g t g a a c a a g g a t g a  
3301 g a a t g t t g c g a t g t c t a c t g g a a g g a g g a c a t c a t c a a g a c c c a a a c g t t c a c  
3361 c a t a g t g a t t c a a g t a g t c t a c t g g a a g g a g g a c a t c a t a t g a t c t c a t a  
3421 t g t t a t g t g g a a g g c t g g c t t t a a a a g a c a a t a c a a a t c t a c t a a g a a g a a a a  
3481 c a g a a g a g a c a g t t g g a g t t a t a c a a c a g t a a a g c a a t g a t g a t t a a g a c a t t t c  
3541 a a a t t g a g a g a t g g a a a a c a c a g

Fig. 10A

**Fig. 10B**

2461 cgtaacaact gtggcaatc cgaagtatga gggaaaatga gtactgccc tgcaaatccc  
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Fig. 11

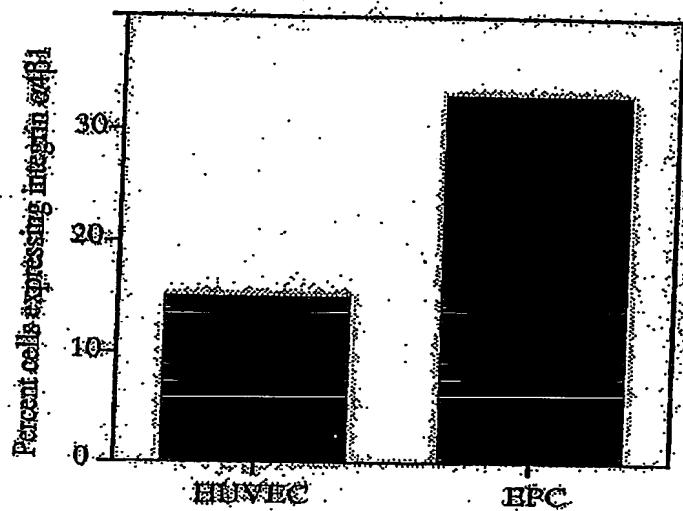
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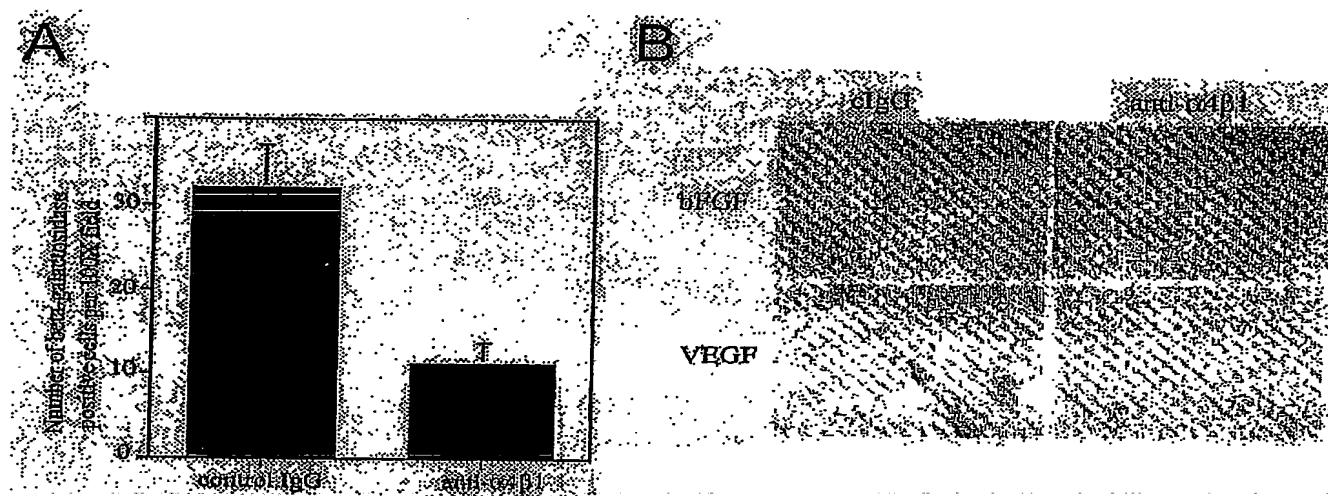
**Fig. 12B**

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Fig. 12C



**Fig. 13**



**Fig. 14**

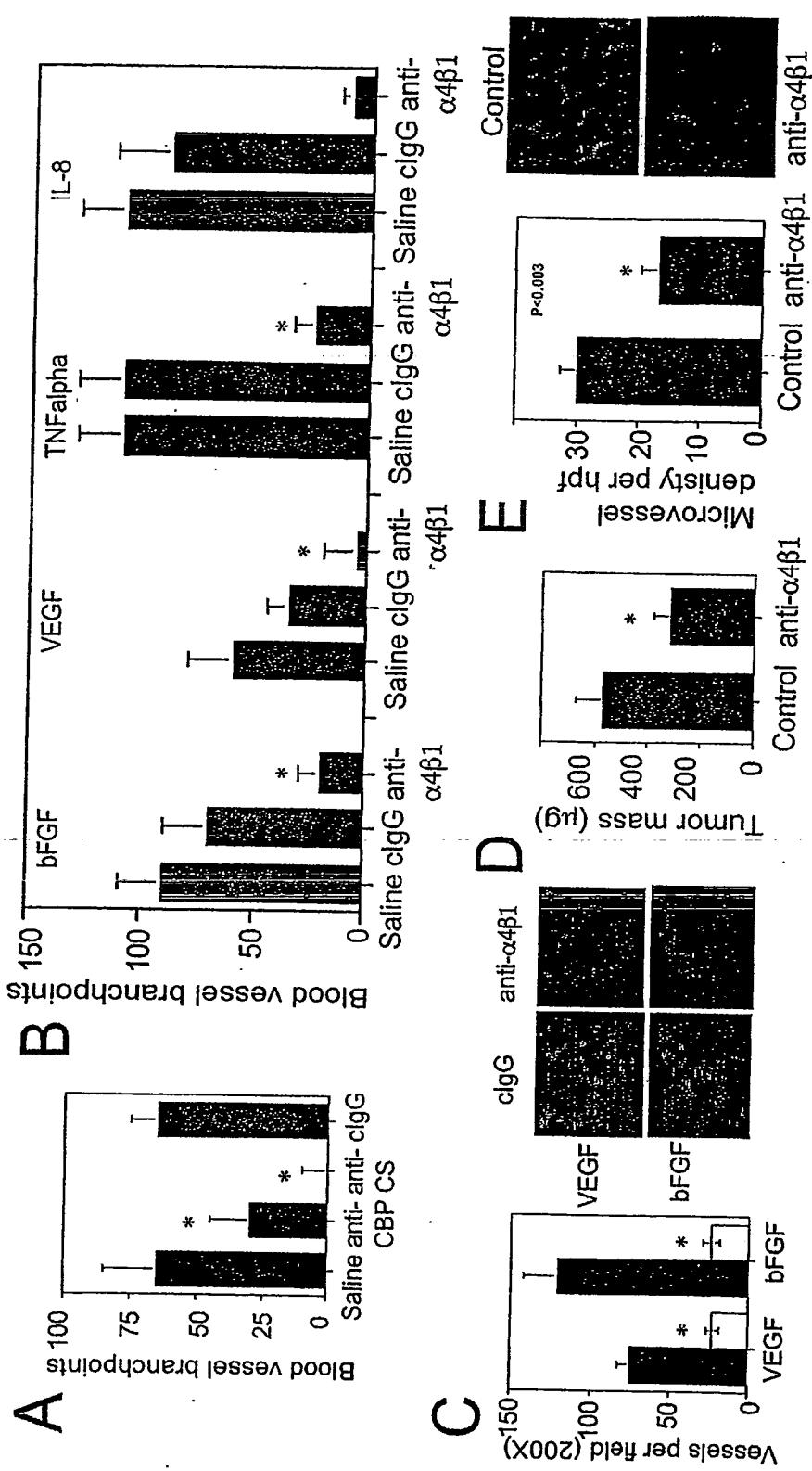


Fig. 15

Fig. 16

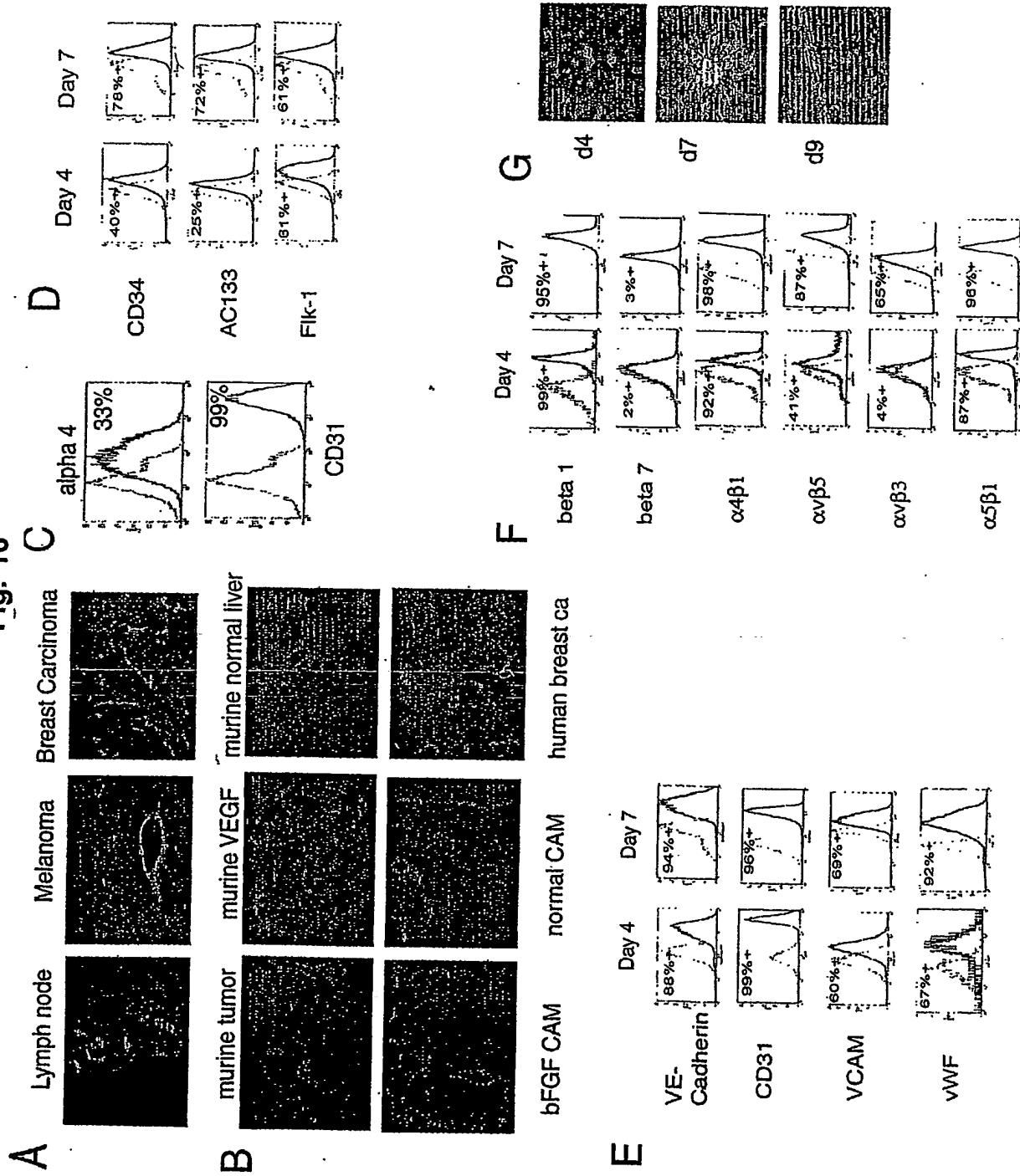


Fig. 17

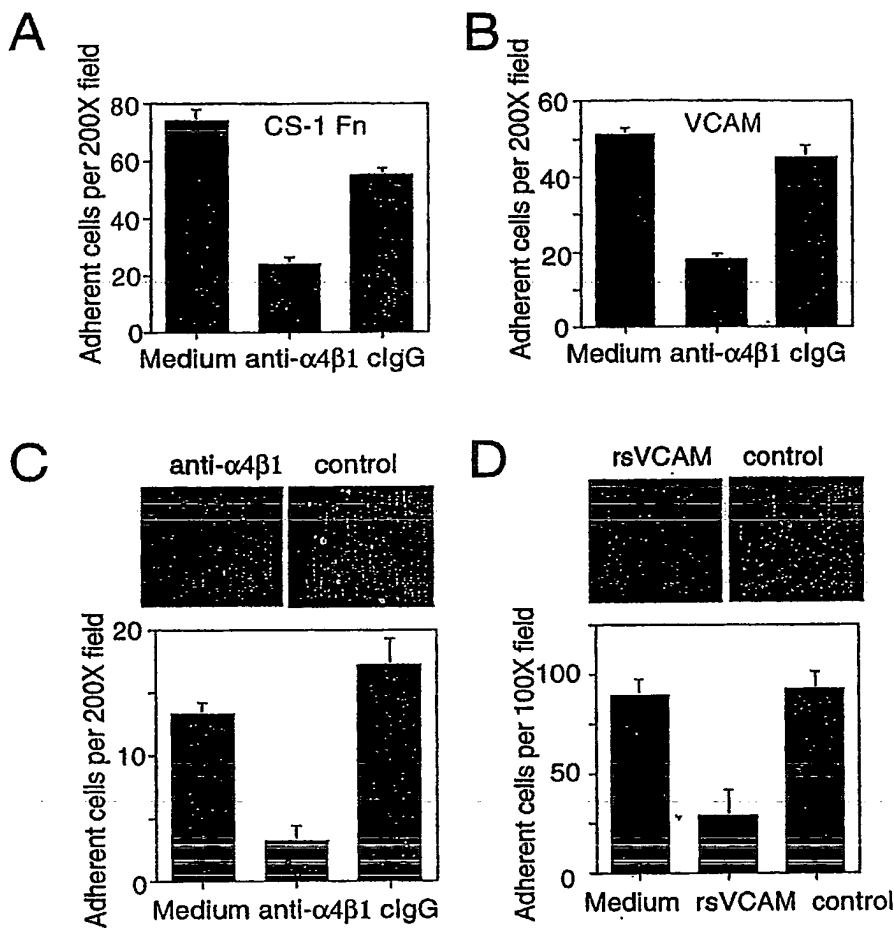


Fig. 18

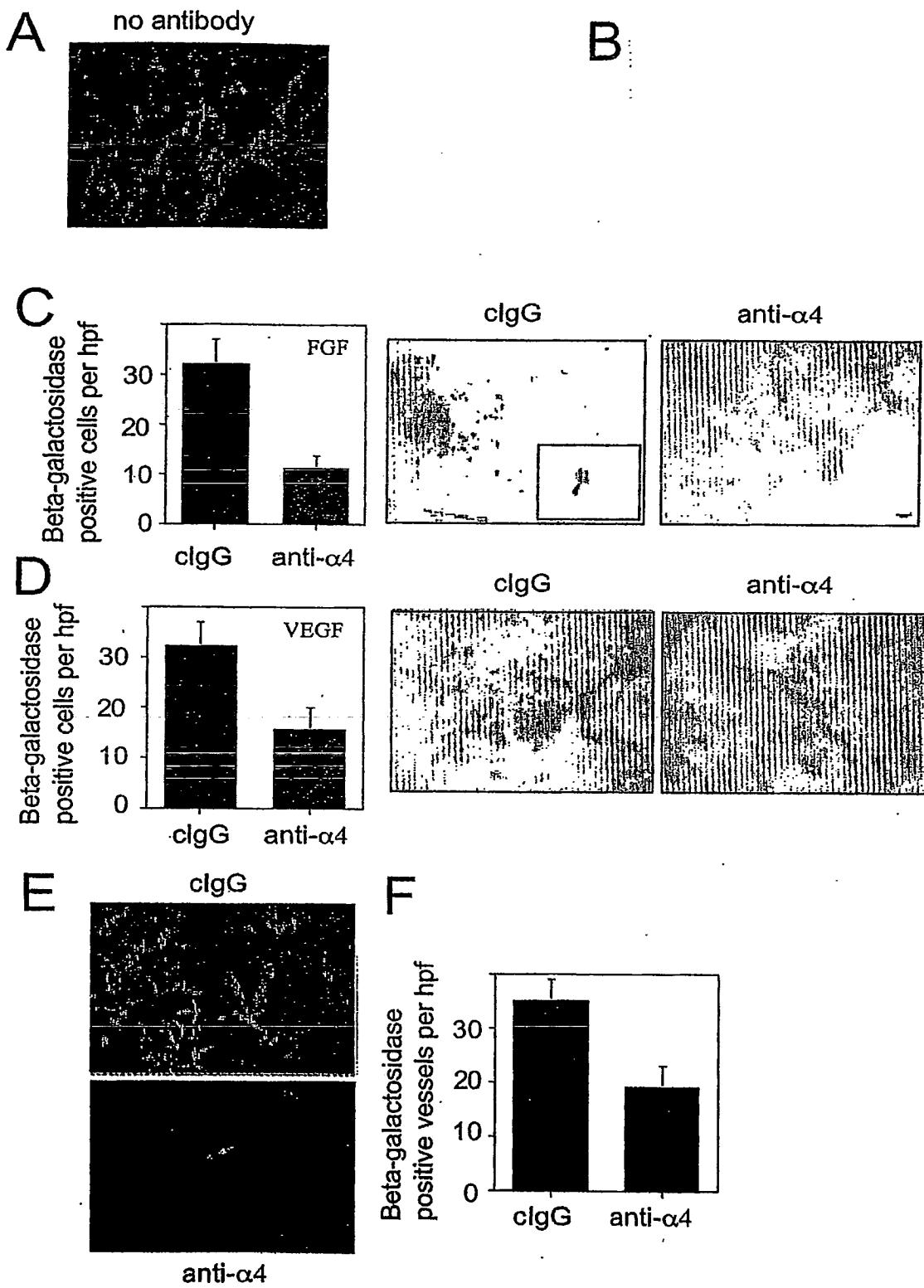


Fig. 19

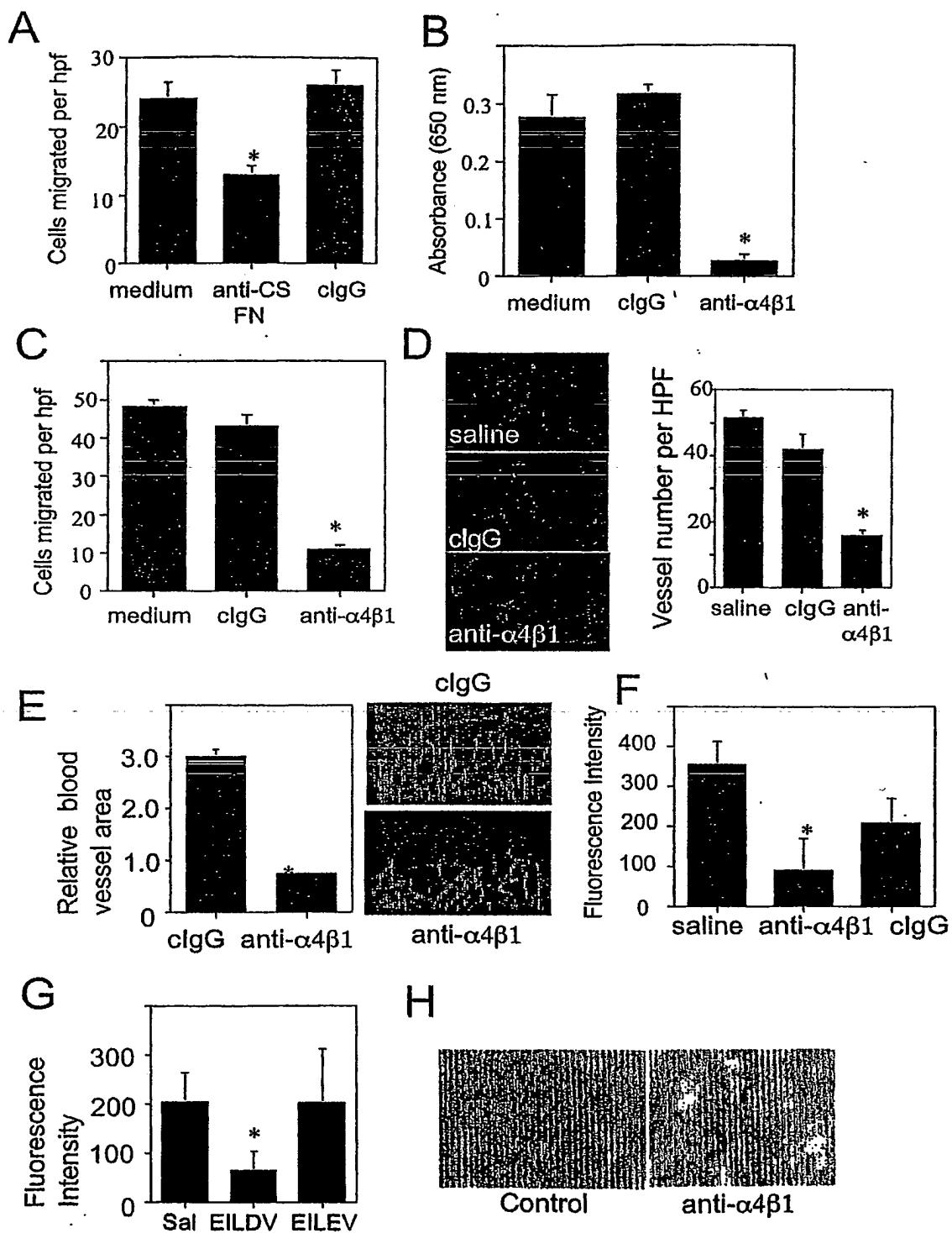
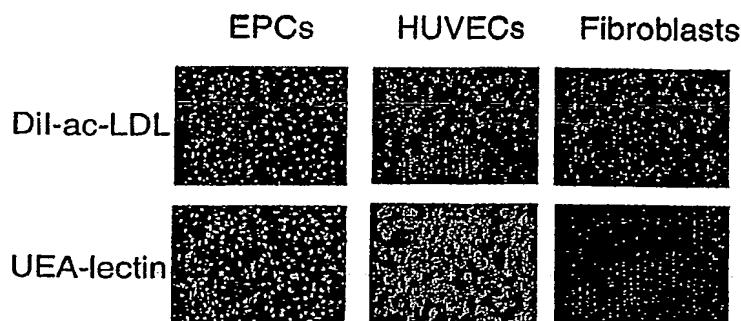
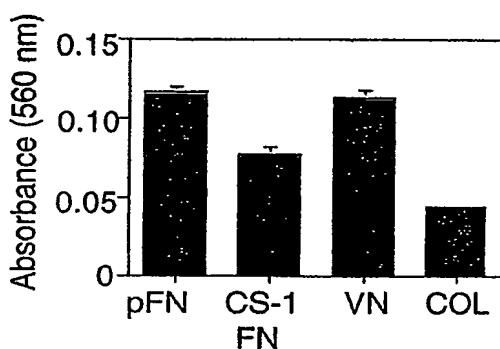


Fig. 20

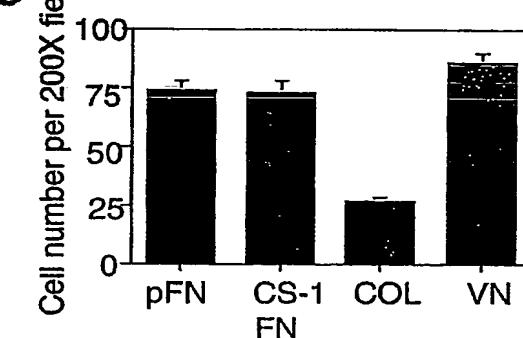
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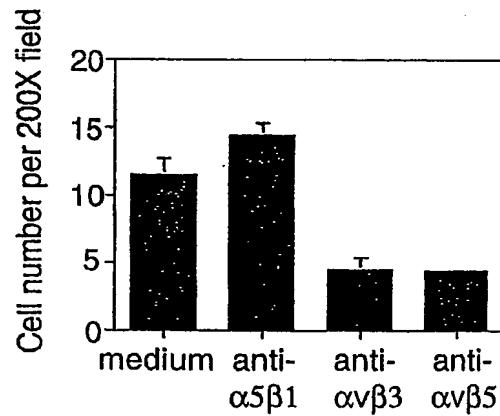
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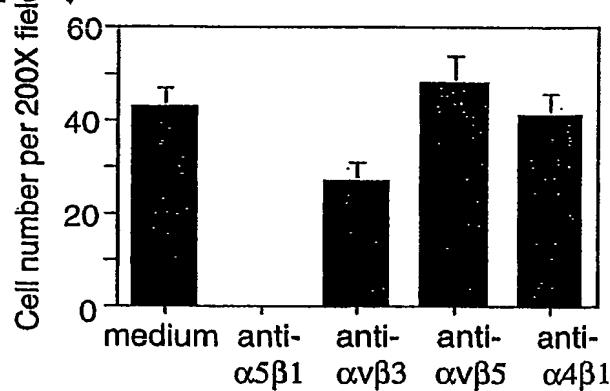
C



D



E



# Endothelial progenitor cells

Bone marrow derived cells that can differentiate into ECs

Peripheral blood leukocytes

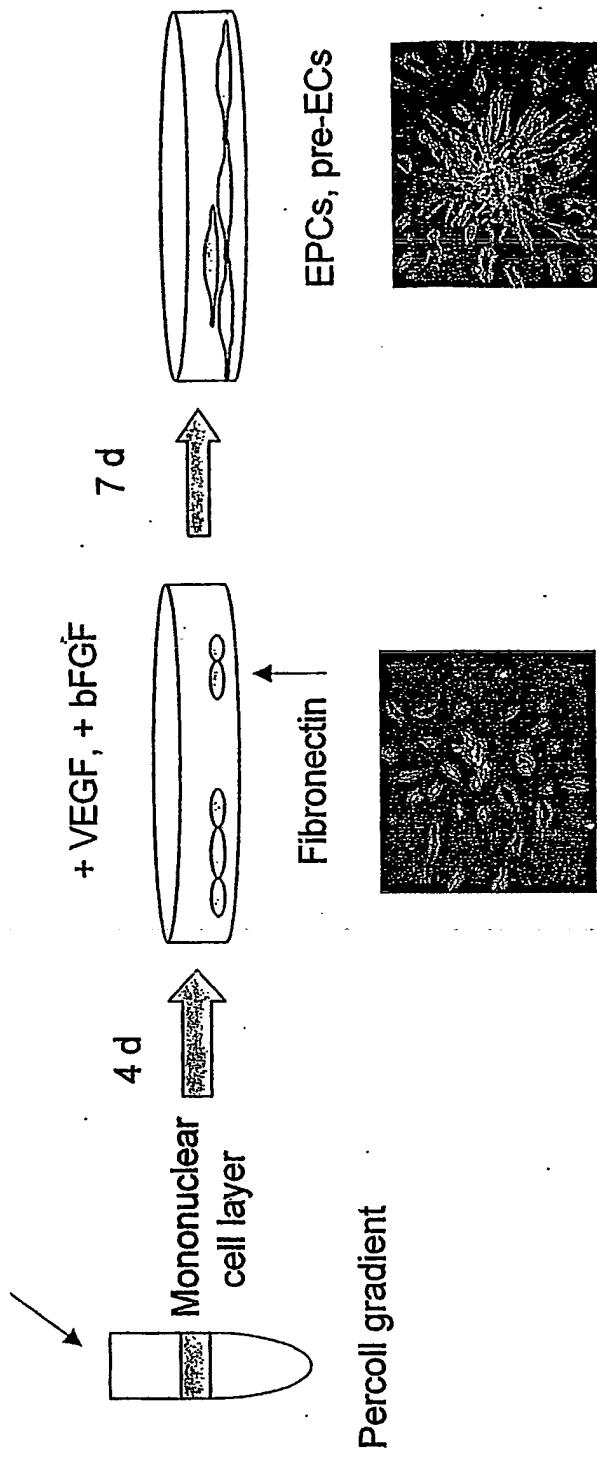


Fig. 21

# Integrin $\alpha 4\beta 1$ appears to be an early marker of EPCs

Fig. 22

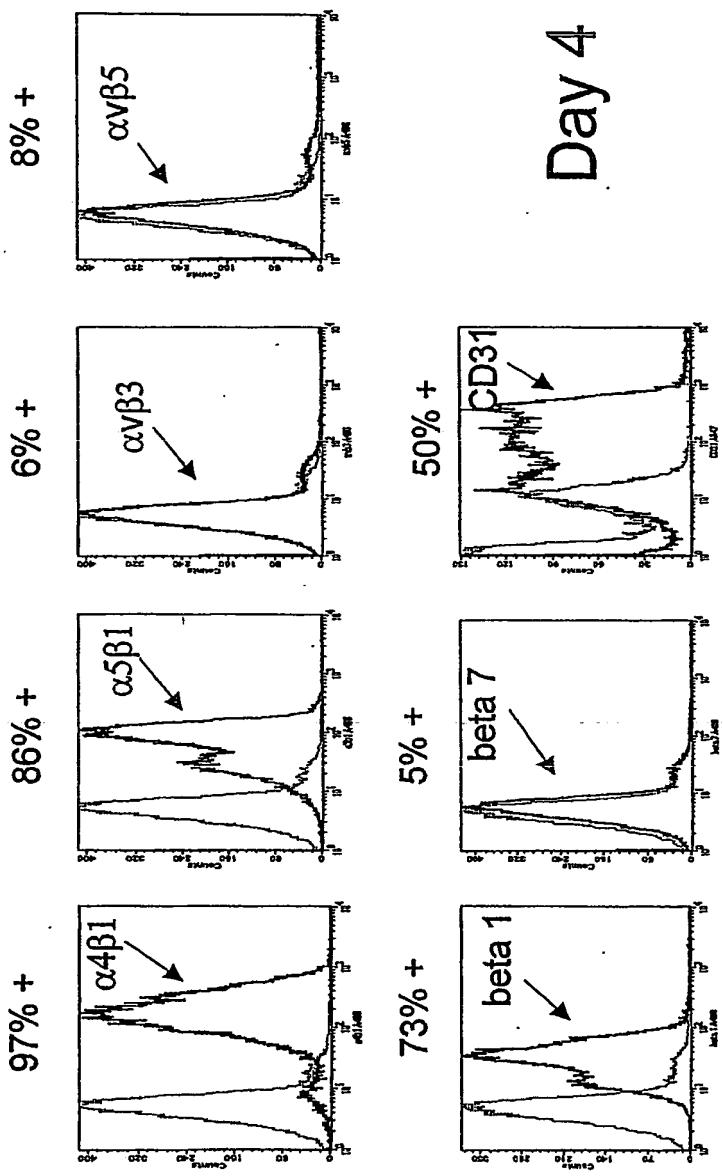
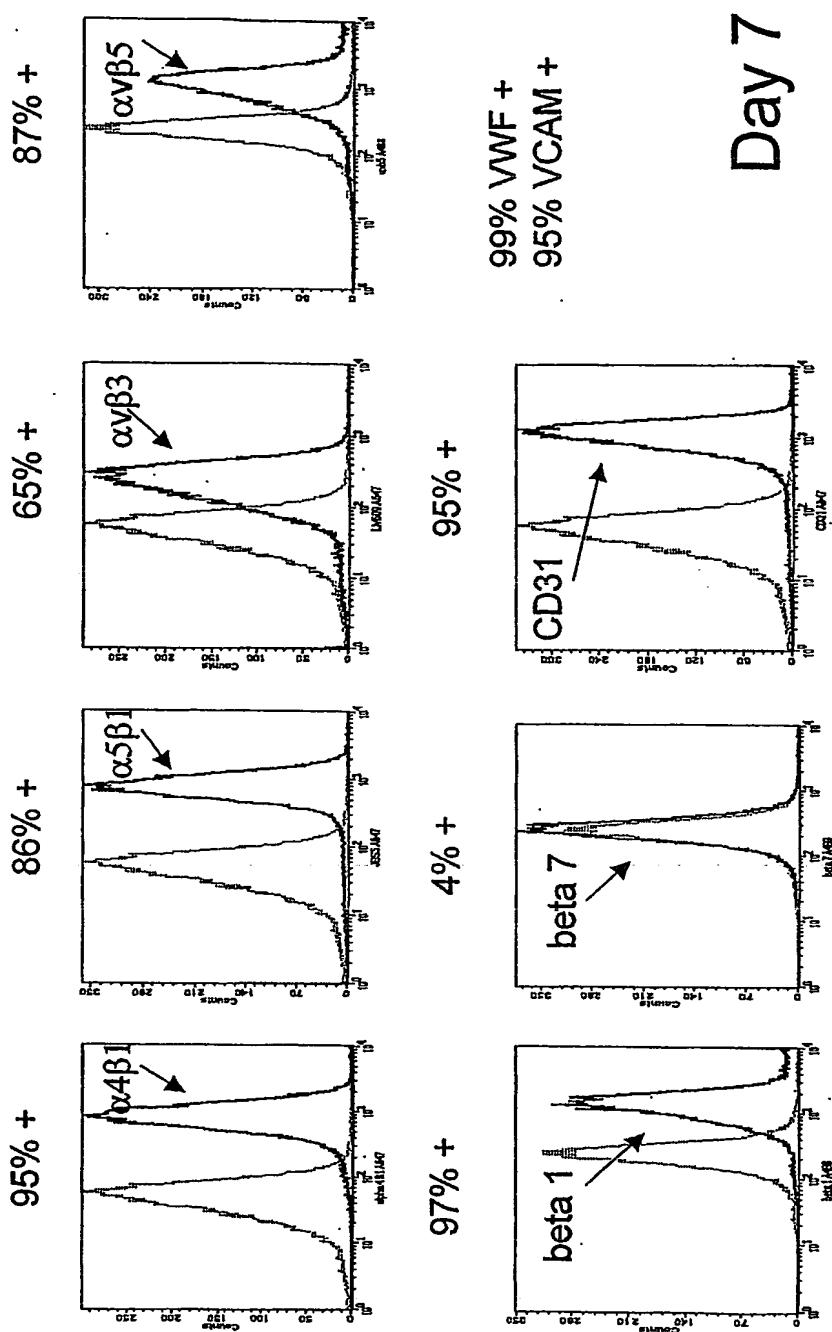


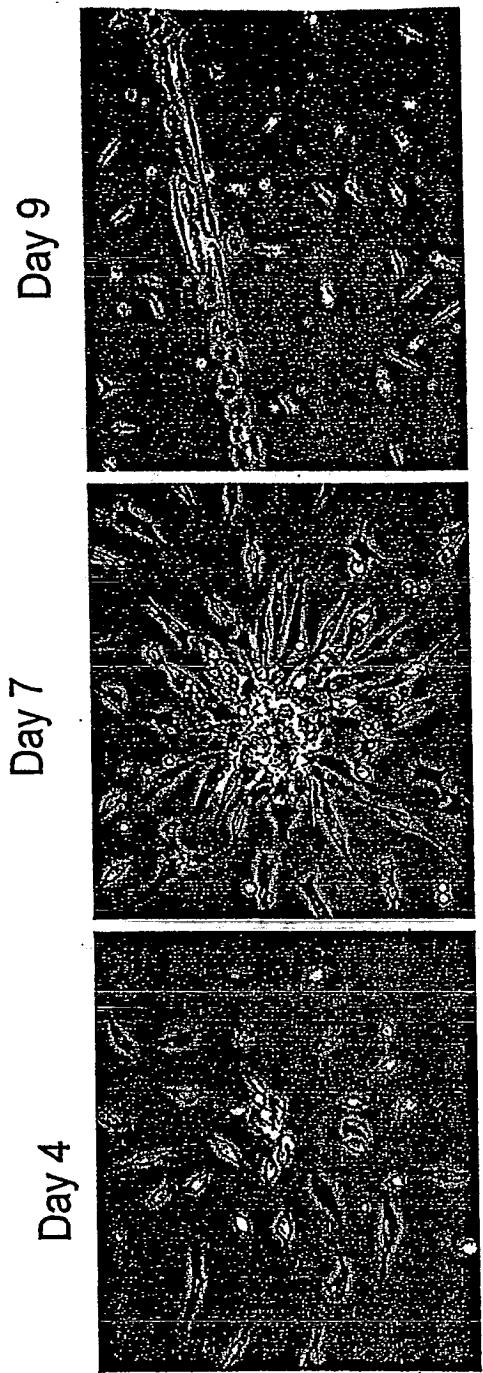
Fig. 23

EPC's remain  $\alpha 4\beta 1$  positive and acquire  
 $\alpha v$  integrin expression



# EPC maturation

Fig. 24



80% small,  $\alpha v \beta 3^-$   
80% spindle shaped,  $\alpha v \beta 3^+$  spontaneous tube formation

Fig. 25

$\alpha 4\beta 1$  mediates EPC adhesion to CS-1  
fibronectin

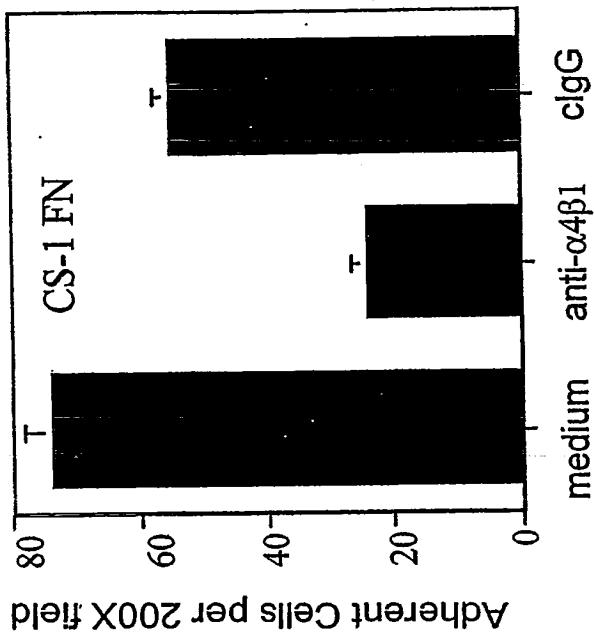


Fig. 26  
 $\alpha 4\beta 1$  mediates EPC adhesion to  
rsVCAM

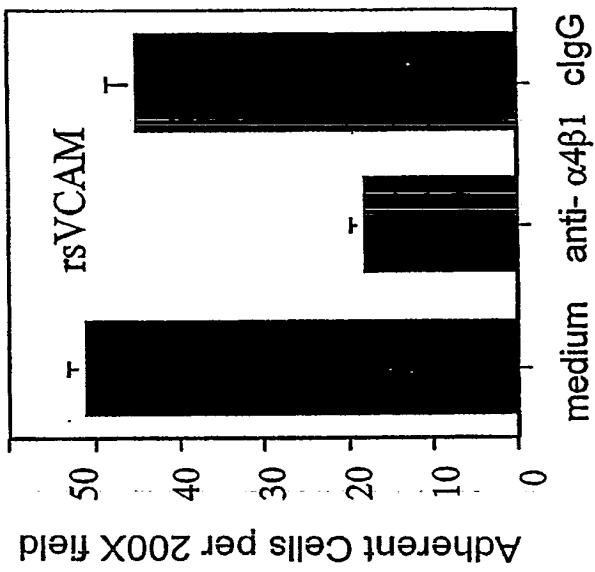


Fig. 27

EP Cs adhere to endothelial monolayers  
via  $\alpha 4\beta 1$

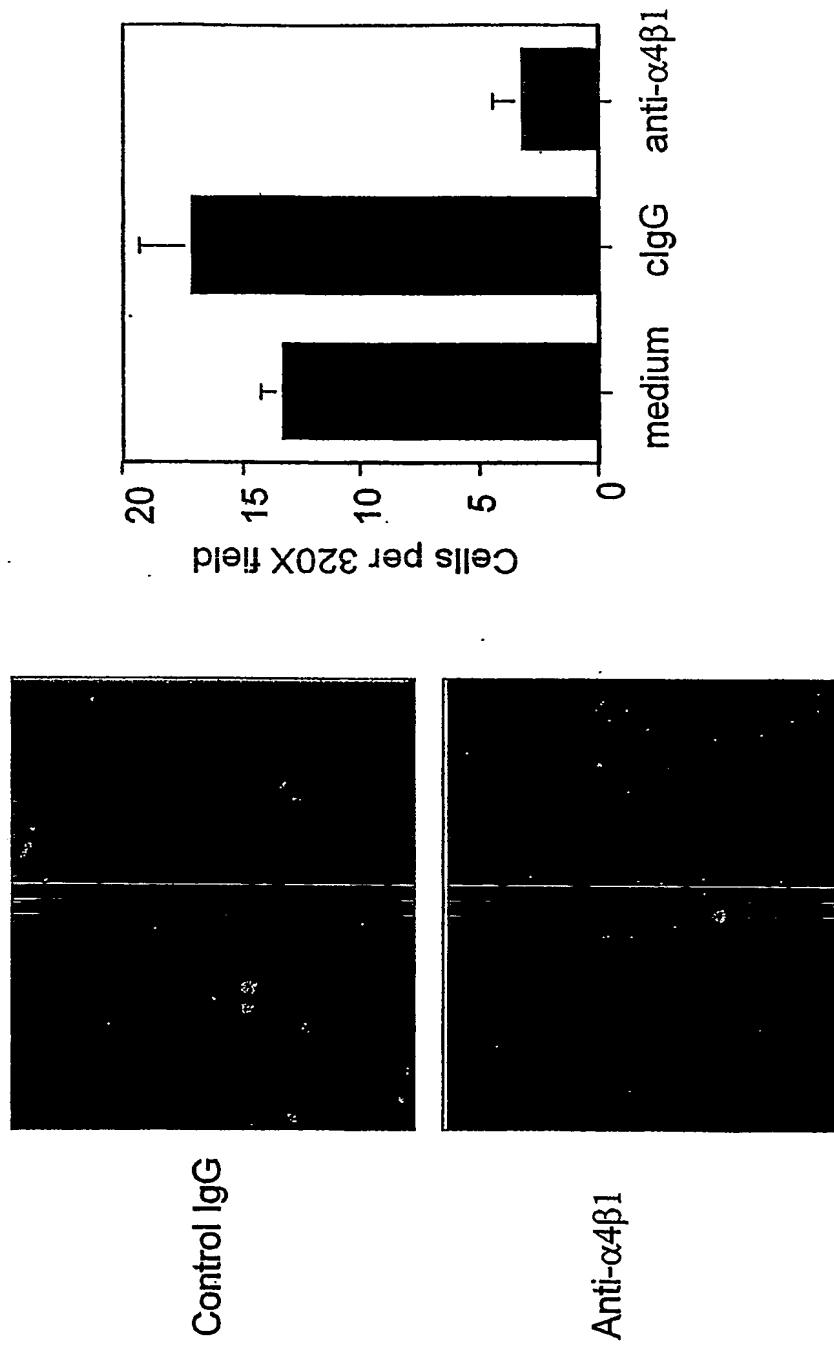


Fig. 28  
EPCs adhere to endothelial monolayers in a  
VCAM-dependent manner

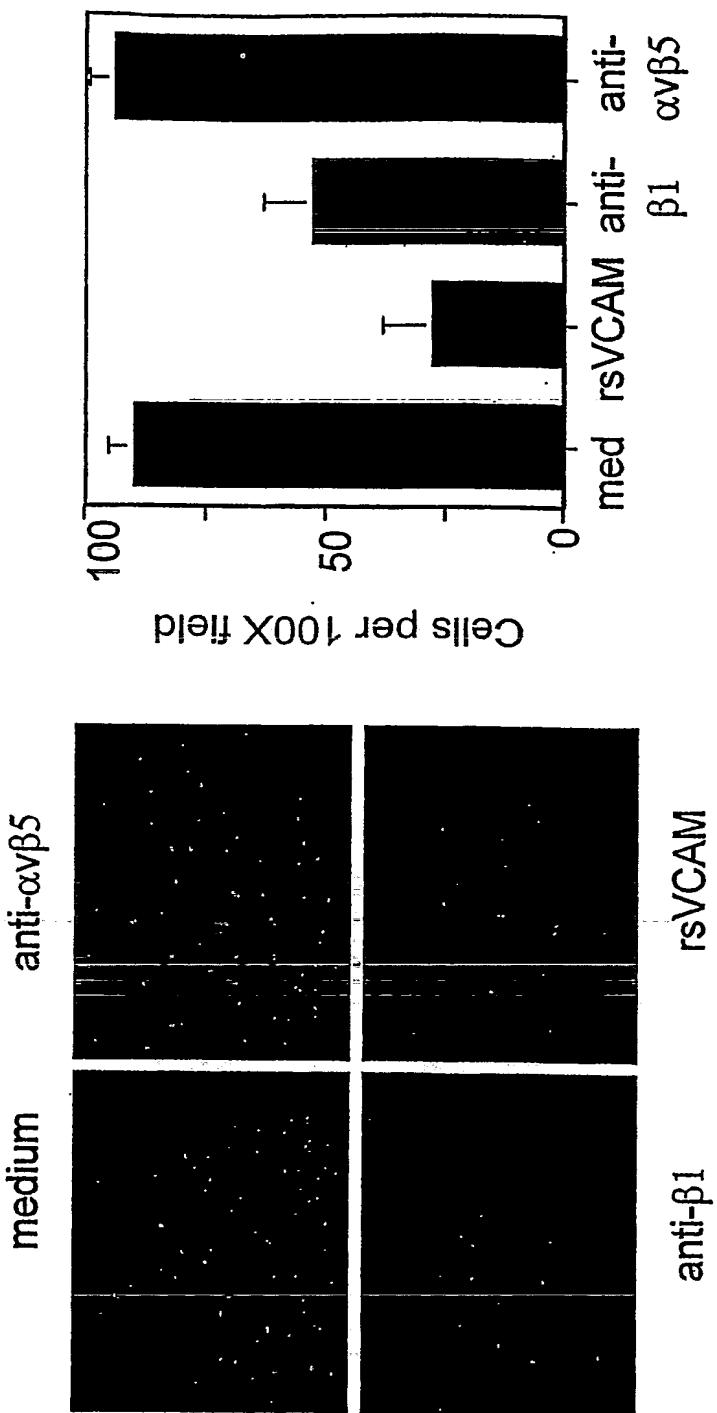


Fig. 29

# Tie2 BMT model of stem cell role in neovascularization

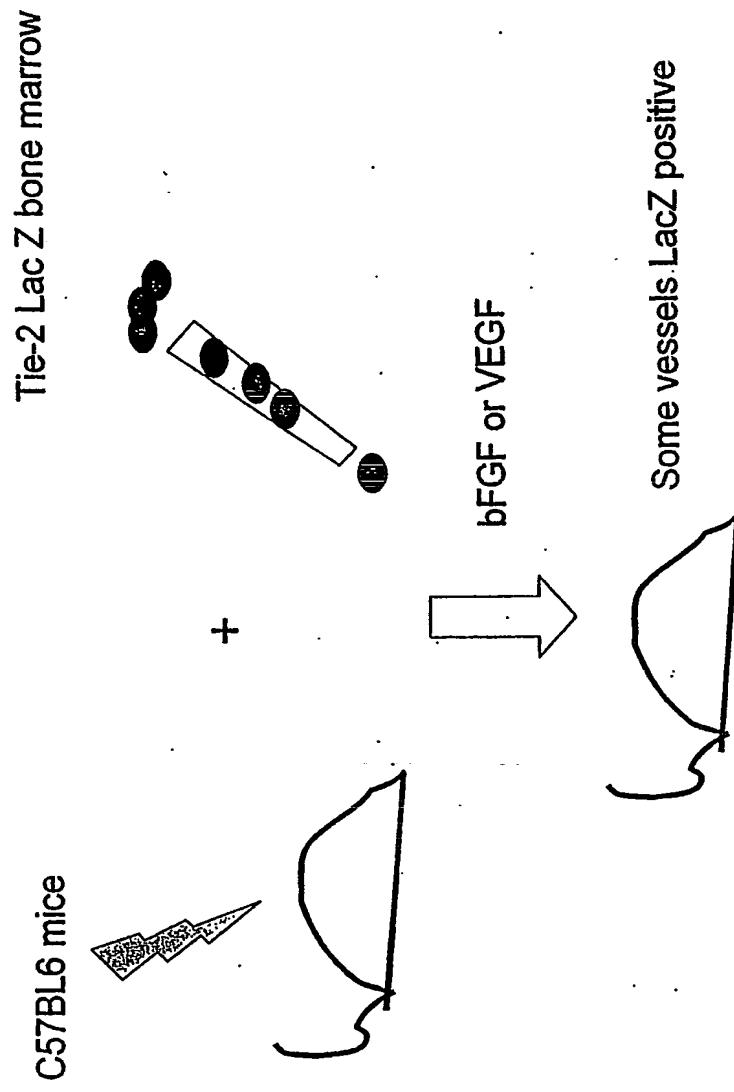
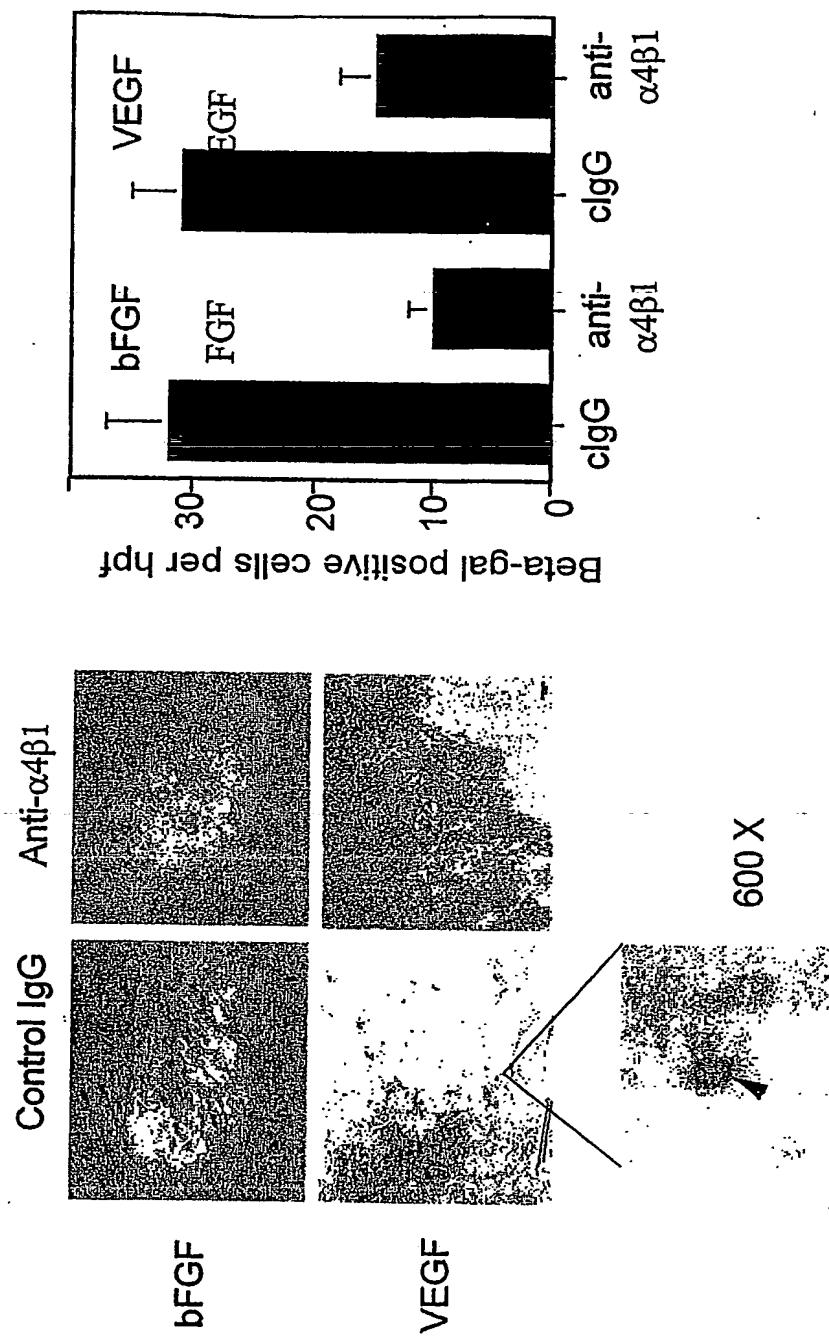


Fig. 30

## Antagonists of $\alpha 4\beta 1$ block EPC entry into neovascular beds



# Integrin $\alpha 4\beta 1$ promotes EPC contributions to angiogenesis *in vivo*

Fig. 31

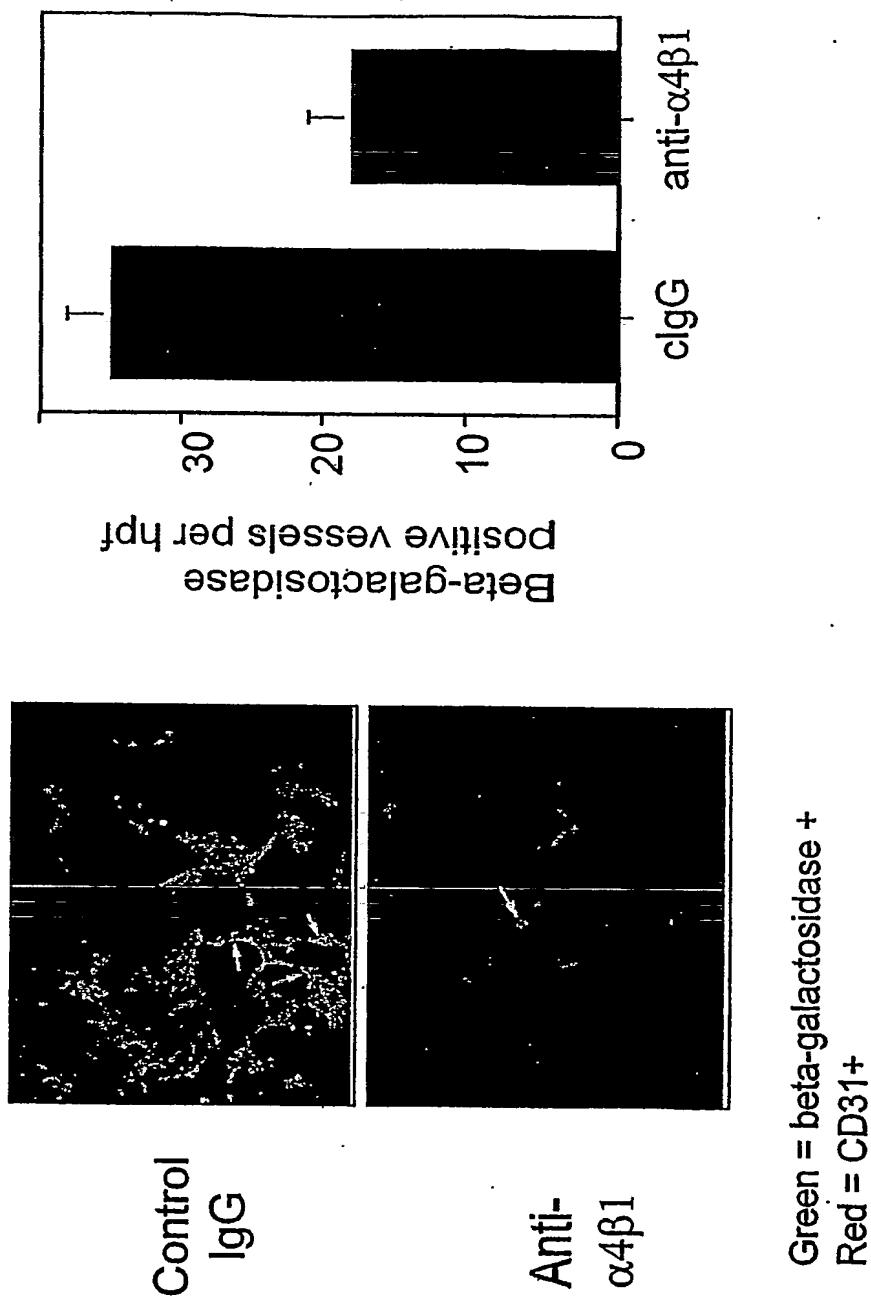


Fig. 32

$\alpha 4\beta 1$  promotes EPC extravasation  
and participation in vessel formation

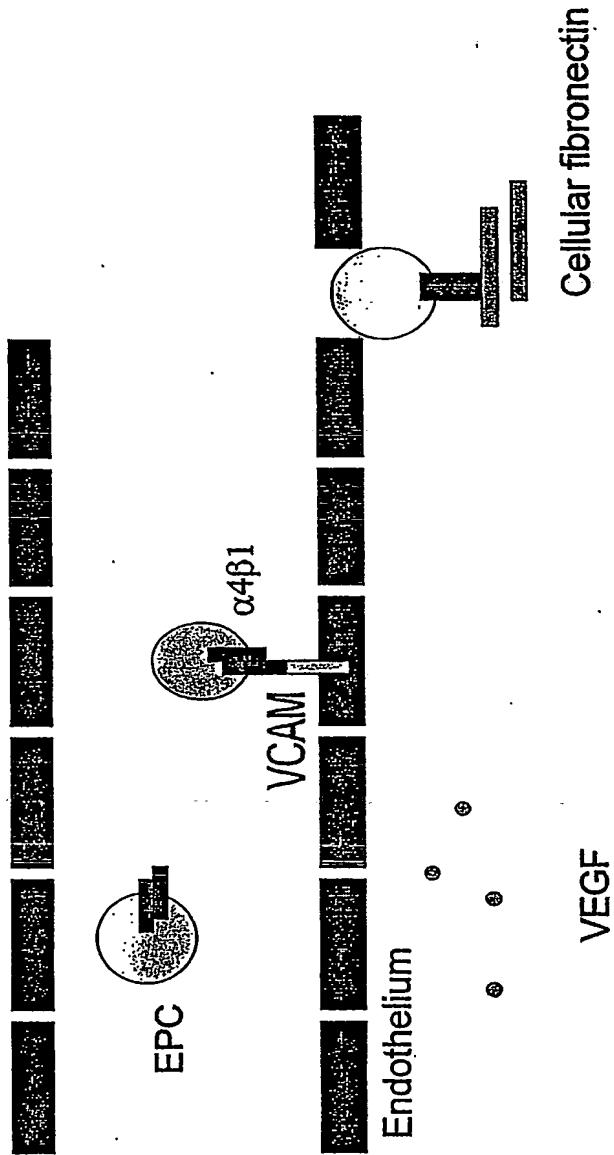
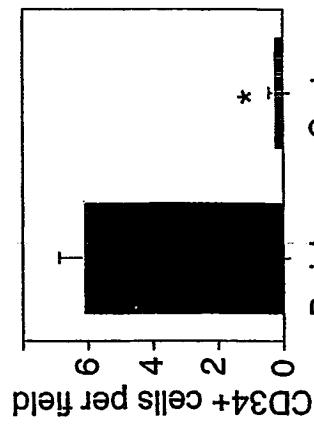
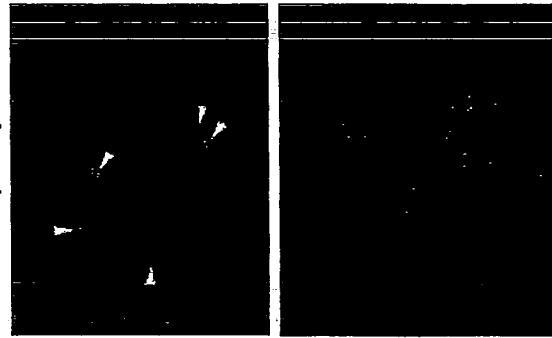


Fig. 33

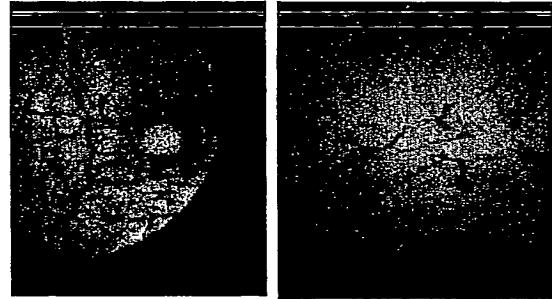
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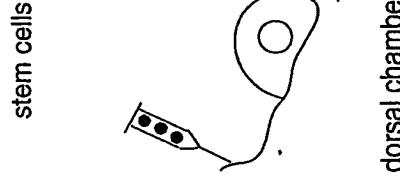
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b



a



e

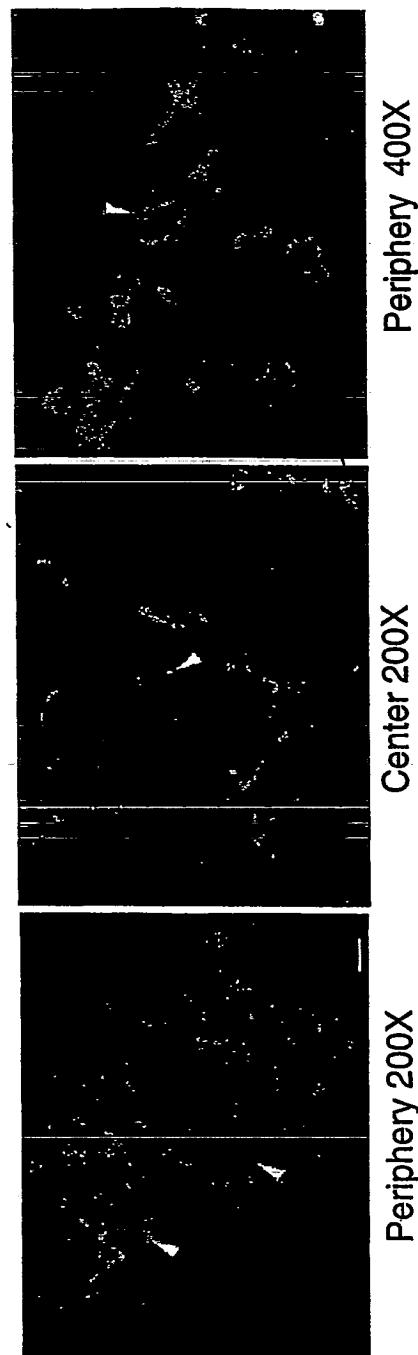
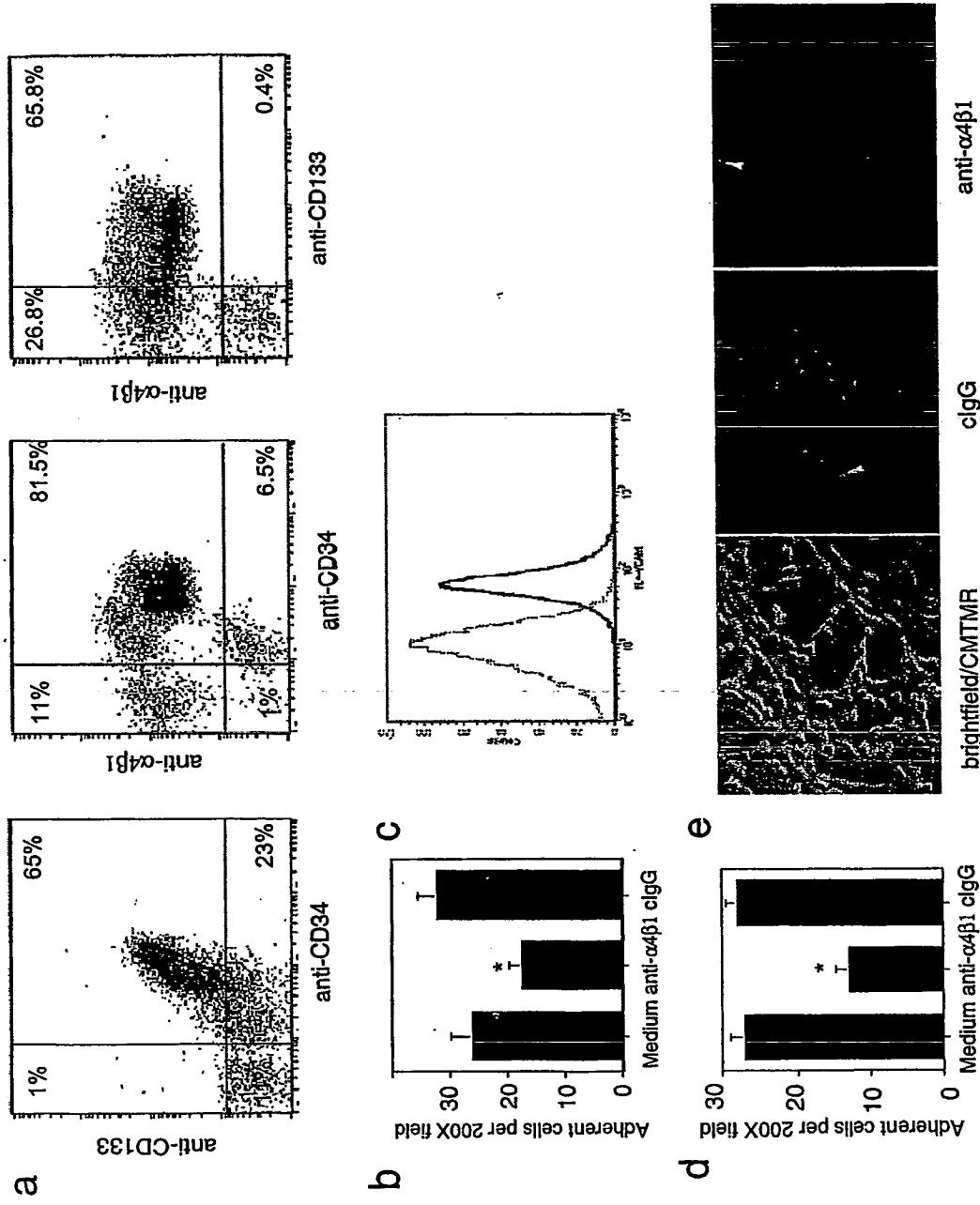
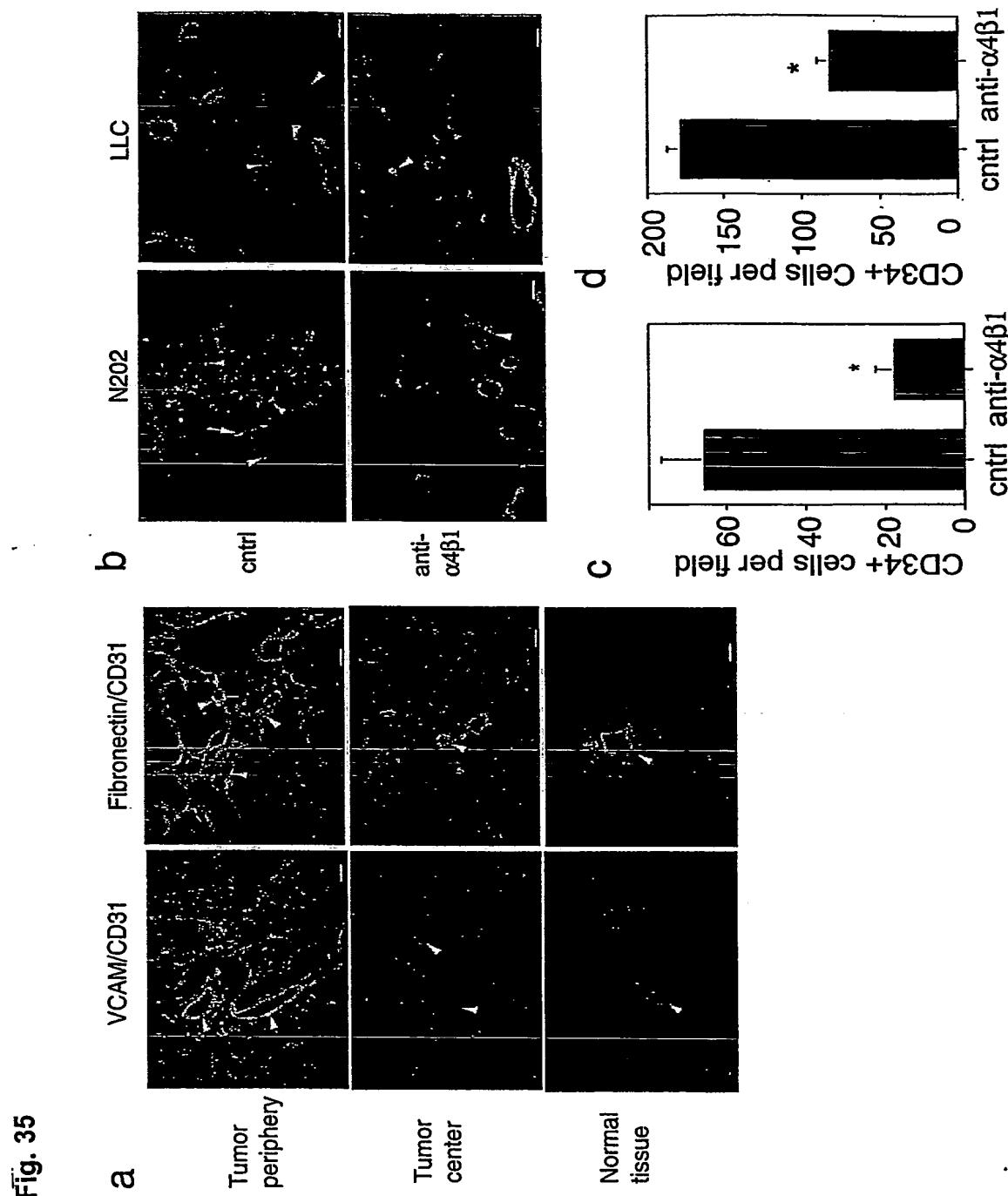
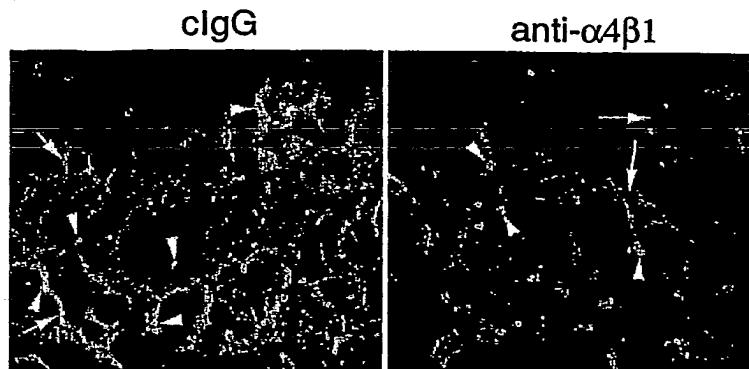


Fig. 34

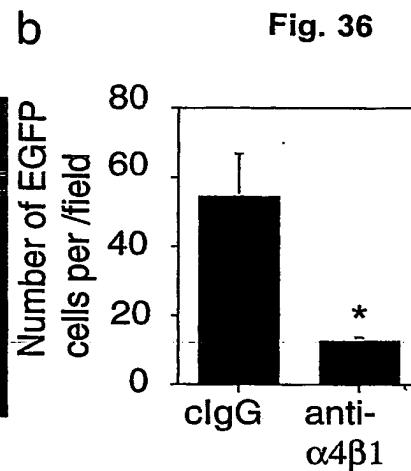




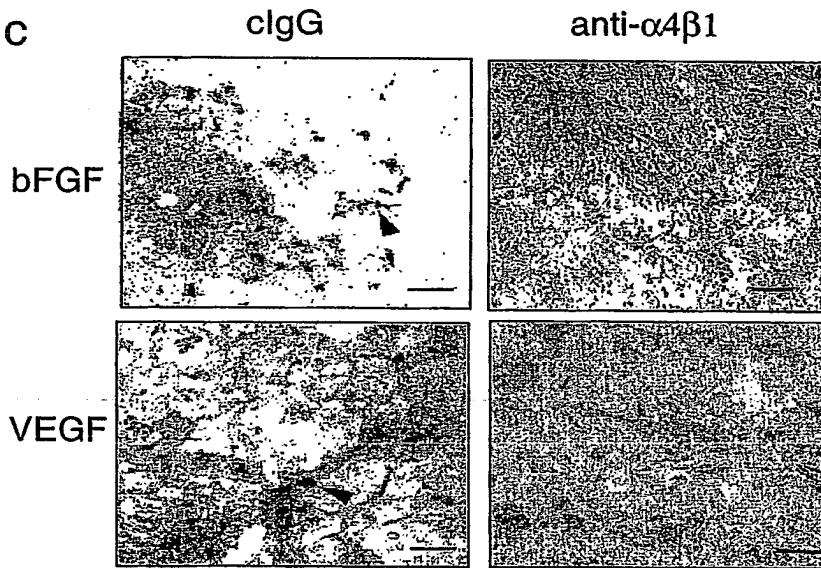
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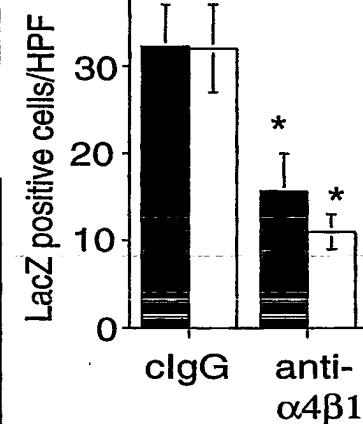
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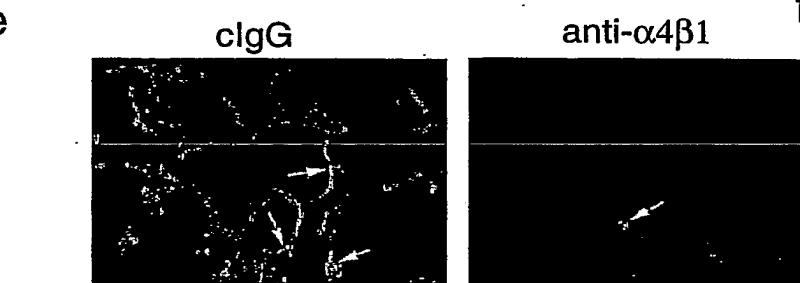
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d



e



f

